

### REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (in small, bold type).

**1. Claims 6-9,14-15,25-28, and 33-34 is objected to because of the following informalities:**

**(1) Claim 6, line 7, "a filter kernel" should be changed to "the filter kernel"; and the same informality was found in claim 25, line 4;**

**(2) Claim 9, line 16, "a filtered value" should be changed to "the filtered value", and the same informality was found in claim 28, line 15;**

**(3) Claim 14, line 8, "a substantially" should be changed to "the substantially", and the same informality was found in claim 15, line 16; claim 33, line 6; and claim 34, line 14.**

**Appropriate correction is required.**

The applicant believes that claims 6, 9, 14, 25, 28 and 33 are clear and proper as written and prefers not to amend them. Claims 15 and 34 have been amended.

**3. The claimed invention is directed to non-statutory subject matter. Claims 20-28 are rejected. "A software product" must be "computer readable medium encoded with software" to be a statutory subject matter.**

The applicant respectfully disagrees with and does not concede the examiner's position. However, to expedite prosecution, the applicant has amended claims 20-38 to recite a "computer readable medium encoded with software."

**5. Claims 1-3,9,13-15,18,20-22,28,32-34, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher (US 6,728,416) in view of Maurer (US-PGPUB 2005/0025378).**

**(1) Regarding claims 1 and 20:**

**Gallagher disclose a method for filternng an image (column 4, line 21-22) including a plurality of pixels (column 4, line 20-21), comprising:**

**defining a difference kernel (column 15, line 28-29) based on local difference between a first kernel and a second kernel (column 15, line 30), (the first and the second kernel are read as bO, and a1), the first and second kernel being defined by the filter kernel centered at a first location and second location (column 15, line 30), respectively, the**

second location being separated from the first location by the characteristic distance separating adjacent pixels in the sequence (it is read that the distance separating adjacent pixels in the sequence is inherent), the difference kernel specifying difference weights for pixels in a neighborhood surrounding a center of the difference kernel (column 15, line 13-15); and

using the difference kernel to determine a difference between a filtered value of a current pixel and a filtered value of a previous pixel that is adjacent to the current pixel in the sequence (column 15, line 28-29).

Gallagher does not explicitly mention the software product, and receiving of a filter kernel to determine one or more filtered values for each pixel in a sequence of pixels in the image.

Maurer, in analogous environment, teaches a method for bilateral filtering of digital images, where employing an algorithm (paragraph [0014], line 2-3), (the algorithm is read as the software product), and using the filter kernel to determine a filtered value for each pixels in the image (paragraph [0006], line 3-6; and paragraph [0037],[0038], line 1-9).

It would have been obvious to one having ordinary skills in art at the time the invention was made to use the method of Maurer, where the filter kernel is determined, in the method of Gallagher in order to preserve the detail without reference to a specific detail size range (in contrast the most single linear filter approaches) and artifacts are prevented (column 4, line 31-33).

The applicant disagrees.

Claim 1 recites "defining a difference kernel based on the local differences between a first kernel and a second kernel ... the difference kernel specifying difference weights for pixels in a neighborhood surrounding a center of the difference kernel." For example, in one implementation discussed in the application, the difference kernel is described as being based on the difference between the *filtering weights* assigned to "a previous kernel ... centered at a previous location..." and "a current kernel ... centered at a current location." (page 16, lines 5-10) Accordingly, the difference kernel is "centered at the current location and [specifies] difference weights" for pixels in a neighborhood surrounding the current location that are "proportional to the difference between the filtering weights specified by the current kernel and the previous kernel." (page 16, lines 21-23, page 17, lines 27-30, and Figs. 5A-C)

In contrast, Gallagher describes a horizontal gradient and a vertical gradient "equal to the absolute value of the difference of the *pixel values* of the smoothed image at the location of the filter kernel values  $b_0$  and  $a_1$  [for the horizontal gradient, and  $b_0$  and  $a_3$  for the vertical gradient,

respectively.]” (col 15, lines 27-43) As such, the measures of the horizontal gradient and the vertical gradient are used further to generate values for the adaptive recursive filter (ARF) coefficients,  $a_1$ ,  $a_2$ ,  $a_3$  and  $b_0$ , from, for example, equations (12)-(15). (col 14, lines 38-50) Nothing in the cited portions of Gallagher or Maurer, alone or in combination, describes or would have made obvious “defining a difference kernel based on the local differences between a first kernel and a second kernel ... the difference kernel specifying difference weights for pixels in a neighborhood surrounding a center of the difference kernel.”

For at least the same reason as claim 1, independent claim 20 is not anticipated or made obvious by the combination of Gallagher and Maurer.

13. Claims 19 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher in view of Tom (US 4,683,496), and Baumberg (US 6,791,540).

Gallagher disclose all the subject matter as described in claims 1 and 20 above.

Gallagher does not explicitly mention:

(1) the receiving of the blur filter kernel to determine one or more blurred values for each pixel, and using the blur kernel directly to determine a blurred value of first pixel; and

(2) each pixel having the same depth value, adjacent pixels being separated by the characteristic distance in the image.

(a) Concerning item (1):

Tom, in analogous environment, teaches a system and method for enhancing images, where a blur kernel is chosen to provide 5x5 convolution and can be generated (column 7, line 40-42), and using the blur kernel directly to determine a blurred value of first pixel (column 7, line 59-61).

It would have been obvious to one having ordinary skills in art at the time the invention was made to use the method of Tom, where using the blur filter kernel, in the method of Gallagher in order to provide a method of enhancing the resolution of a first frequency band using information contained within other pictorial representation of the image within the second frequency band, where the second pictorial representation has a better resolution than the first pictorial representation (column 2, line 16-22).

(b) Concerning item (2):

Baumberg, in analogous environment, teaches an image processing apparatus, where specifying the same value for the depth map image (column 10, line 24-29).

**It would have been obvious to one having ordinary skills in art at the time the invention was made to use the method of Baumberg, where the depth value is the same, in the method of Gallagher in order to view the scene in different viewing position/orientation such as photographs, television pictures, and video pictures (column 1, line 8-13).**

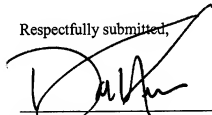
For at least the same reason as claim 1, independent claims 19 and 38 are not anticipated or made obvious by the combination of Gallagher, Tom and Baumberg. All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Any circumstance in which the applicants have (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

No fee is believed due. Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Date: 9/5/17

Respectfully submitted,

  
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